

U.S. Patent Application Serial No. 10/777,039
Response filed February 4, 2005
Reply to OA dated November 4, 2004

REMARKS

The applicants respectfully submit that no new matter has been added. It is believed that this Response is fully responsive to the Office Action dated November 4, 2004.

In the outstanding Office Action, claims 1 - 3 stand rejected under 35 U.S.C. 103(a) based on Kitano (U.S. Patent No. 6,638,642) or Yamanishi (U.S. Patent No. 5,366,814). The applicants respectfully request reconsideration of these rejections.

The applicants' claimed invention, as set forth in independent claim 1, is directed to a chip-on-film use copper foil. Such claimed chip-on-film use copper foil includes a copper foil on at least one surface of which is provided an alloy fine roughening particle layer comprised of a copper-cobalt-nickel alloy with contents of cobalt and nickel equal to or greater than that of copper.

A significant structural arrangement of the applicants' claimed chip-on-film use copper foil includes a copper foil on at least one surface of which is provided an alloy fine roughening particle layer comprised of a copper-cobalt-nickel alloy. Similarly significant is the fact that the copper-cobalt-nickel alloy of the claimed alloy fine roughening particle layer has the cobalt and nickel equal to or greater than that of copper.

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Kitano discloses a copper-cobalt-nickel plating treatment, wherein the cobalt concentration is 1 to 15 g/L, the nickel concentration is 1 to 15 g/L, and the copper concentration is 5 to 25 g/L. However, it cannot be said that Kitano discloses a copper-cobalt-nickel alloy with contents of cobalt and nickel equal to or greater than that of copper because in Kitano, the cobalt concentration can be 1 g/L, the nickel concentration can be 1 g/L, and the copper concentration can be 25 g/L. That is, Kitano teaches away from the applicants' claimed invention because the copper concentration is much greater than the cobalt and nickel concentrations. In addition, a metal concentration ratio of a plating solution does not always agree with a metal content ratio of a plating layer. In view of the above, Kitano does not teach the contents of copper-cobalt-nickel layer, as claimed in the applicants' instant claimed invention.

Furthermore, Kitano does not disclose that a copper-cobalt-nickel layer is an alloy fine roughening particle layer, as in the applicants' claimed invention.

Also, Kitano does not disclose a copper foil, which has a copper-cobalt-nickel layer formed on the side thereof where the copper foil is bonded to the resin substrate for preventing a drop of bond strength. Instead, Kitano teaches a copper foil which has a copper-cobalt-nickel layer formed on the side that is opposite to the side where the copper foil is bonded to the substrate for excellent

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drilling property by laser.

Accordingly, a person of ordinary skill in the art would not have found the applicants' claimed invention, as set forth in claim 1 (and claims 2 and 3 which depend on claim 1), obvious under 35 U.S.C. 103(a) based on the teachings of Kitano.

As to Yamanishi, Yamanishi discloses a copper foil having a roughened layer consisting of copper containing chromium, tungsten or both, a copper plating layer formed thereon and a treatment layer formed thereon. Thus, the roughening layer in Yamanishi is not a copper-cobalt-nickel layer, but a copper layer containing chromium, tungsten or both. In other words, Yamanishi does not disclose an alloy fine roughening particle layer comprised of a copper-cobalt-nickel alloy with contents of cobalt and nickel equal to or greater than that of copper.

Therefore, a person of ordinary skill in the art would not have found the applicants' claimed invention, as set forth in claim 1 (and claims 2 and 3 which depend on claim 1), obvious under 35 U.S.C. 103(a) based on the teachings of Yamanishi.

Accordingly, the withdrawal of the outstanding obviousness rejections under 35 U.S.C. 103(a) based on Kitano (U.S. Patent No. 6,638,642) or Yamanishi (U.S. Patent No. 5,366,814) is in order, and is therefore respectfully solicited.

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If, for any reason, it is felt that this application is not now in condition for allowance, the Examiner is requested to contact the applicants' undersigned attorney at the telephone number indicated below to arrange for an interview to expedite the disposition of this case.

In the event that this paper is not timely filed, the applicants respectfully petition for an appropriate extension of time. Please charge any fees for such an extension of time and any other fees which may be due with respect to this paper to Deposit Account No. 01-2340.

Respectfully submitted,

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